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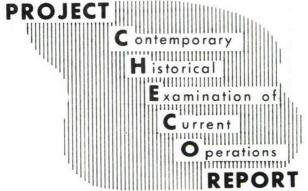
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# RECONNAISSANCE IN SEASIA

JUL 1966-JUN 1969

15 JULY 1969

### HQ PACAF

Directorate, Tactical Evaluation CHECO Division

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LT EDWARD P. BRYNN

Project CHECO 7th AF, DOAC

DOTEC-69-62

#### PROJECT CHECO REPORTS

The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in the employment of USAF airpower to meet a multitude of requirements. The varied applications of airpower have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, there has been an accumulation of operational data and experiences that, as a priority, must be collected, documented, and analyzed as to current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity that would be primarily responsive to Air Staff requirements and direction, and would provide timely and analytical studies of USAF combat operations in SEA.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet this Air Staff requirement. Managed by Hq PACAF, with elements at Hq 7AF and 7AF/13AF, Project CHECO provides a scholarly, "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. Along with the other CHECO publications, this is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM.

MILTON B. ADAMS, Major General, USAF

Chief of Staff



#### DEPARTMENT OF THE AIR FORCE

HEADQUARTERS PACIFIC AIR FORCES
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WARREN H. PETERSON, Colonel, USAF

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### CHAPTER I

#### INTRODUCTION

The traditional interpretation of the tactical reconnaissance mission as a highly mobile, self-sufficient operation prepared to "know continuously the enemy's capabilities and location" has been reemphasized by the recent military experience in Southeast Asia. A premium has been placed by several factors on the element of surprise, on detection of an enemy able to conceal himself more effectively than ever before, and on the most rapid possible response to requirements established by ground and air forces. Many axioms guiding reconnaissance organization and operations in the past have been reexamined and questioned in the light of conditions encountered in Southeast Asia. The task of providing "needed intelligence information during all phases and for the full spectrum of conflict" has created special problems yet to be fully resolved. This report reviews the expansion and growth in sophistication of the tactical reconnaissance mission in Southeast Asia (SEA) conducted by the United States Air Force from June 1966 to June 1969, noting at the same time the salient problems involved.

Tactical reconnaissance emphasizes flexibility in its organization and operation; it can be deployed in package units or through various combinations of reconnaissance aircraft, sensors, and other detection devices as required by the joint force. The Wing, therefore, constitutes the basic tactical unit, small enough to fulfill mobility requirements and still provide from its own resources all the services of a tactical reconnaissance system. The broad scope of the Wing's mission can be seen in a summary of the work of the 432d



Tactical Reconnaissance Wing (TRW) at Udorn Royal Thai Air Force Base (RTAFB),  $\frac{4}{}$  Thailand, prepared by Col. L. Bevan, Jr.:

- Collect intelligence information concerning the strength, disposition, movement, and activity of hostile forces through the employment of aerialvisual, photographic, radargraphic, and thermographic reconnaissance;
- 2. Organize, equip, train, and administer forces assigned or attached and maintain them at a high degree of readiness;
- Exercise command control over subordinate assigned or attached units;
- 4. Provide normal base support for maintenance and operation of assigned and attached units/organizations/detachments. This support includes, but is not limited to: transportation; food service; communications; supply: POL; maintenance; munitions; administration; medical support, etc.

The responsibilities of the 432d TRW, as host outfit, are necessarily greater than those of its sister Wing, the 460th TRW at Tan Son Nhut (TSN) Air Base, Republic of Vietnam (RVN). Within each Wing, elements perform data collection and rapid/detailed analysis and disseminate the derived information. Thus the Photo Processing and Interpretation Facility (PPIF) provides immediate phase readout while the Wing Reconnaissance Technical Squadron provides second phase readout. When mobility becomes a preeminent consideration, package units smaller than the Wing, Reconnaissance Task Forces (RTFs), can be employed for short periods on a self-sufficient basis. In SEA, the emphasis on reduction of time intervals between retrieval and use of information has confirmed the value of Immediate Photo Intelligence Reports (IPIR) and has prompted numerous studies to further reduce the time required to get information to the



user. Command and control have been the subject of considerable discussion since 1966. In joint operations, the tactical air reconnaissance force is directly subordinate to the Air Commander. Staff direction comes from the Deputy for Operations through his Staff Reconnaissance Officer (SRO), and tasking is arranged through the Tactical Air Control Center (TACC).

Rapid and accurate collection and dissemination of vital information constitute the heart of the reconnaissance operation. Immediate and preplanned requests must be satisfied by reference to several types of reconnaissance gathering, distinguished from one another by target environment, immediacy, and objective. Inflight reports, such as aircrew reports of visual reconnaissance (VR), provide real time intelligence. Debriefing reports are made immediately upon landing, and image interpretation reports are begun as soon as sensor data can be read. More detailed photography and interpretation are performed as needed. Electronic reconnaissance (ER) reports and general weather reconnaissance provide additional data; Airborne Radio Direction Finding (ARDF) has become one of the primary detection methods employed in SEA.

While target identification methods have been subject to change and discussion under the pressure of wartime conditions, some traditional classifications remain constant. Targets--fixed, transient, and fleeting, especially the last--are determined by VR, imagery and electronic devices. The value of VR has been subject to considerable debate because of areas covered by heavy foliage. In open areas, however, VR remains a significant source of information. Photo reconnaissance has emerged as the mainstay of the entire mission, but the effectiveness of sophisticated camera equipment has been compromised by



the need to fly faster and higher to avoid enemy fire. Electronic Reconnaissance (ER) has also found expression in a wider number of sensory devices whose introduction into SEA have been a major producer of tactical information since 1966. Finally, the objectives established for reconnaissance operations have shown considerable changes in emphasis. Of the four major areas (reconnaissance for counterair, interdiction, close air support, and surface forces), the first has been of decidedly less importance than in World War II and Korea, the second perhaps more important but geographically and "politically" restricted, the third difficult to anticipate because of guerrilla tactics, and the fourth an occasion for differences of opinion between the Army and Air Force. Reconnaissance for interdiction has emerged as an area of major concern in terms of detection systems available to prevent infiltration of supplies; support of ground forces, however, has engendered the bulk of interservice disputes.

### Reconnaissance: Themes and General Conditions

Among the manifold problems faced by tactical reconnaissance in SEA were several general themes: (1) a struggle between advocates of a centralized reconnaissance system and those demanding "organic" reconnaissance centered with units in the field; (2) increasing sophistication of enemy concealment techniques; (3) growing effectiveness of enemy efforts to destroy reconnaissance aircraft; (4) increasing emphasis on interdiction reconnaissance; (5) the controversy of employing a sophisticated tactical reconnaissance system in a permissive environment; and (6) total management of the in-country reconnaissance effort by the joint commander, COMUSMACV.

The frustrations involved in these problems are not without certain





historical precedents. The role of the First Aero Squadron in supporting Gen. John J. Pershing's campaign against Pancho Villa in 1916 showed some similarities to present conditions in SEA: fluctuating battle lines; ability of enemy troops to appear as a part of the resident population; rugged terrain with manifold opportunities for concealment; lack of enemy air opposition; and in some areas, lack of ground-to-air opposition.

Perhaps much more important were lessons learned, or not learned, in Korea. Not until August 1951 were the various tactical reconnaissance components consolidated at Kimpo in Korea, and this did not resolve all difficulties.

Much as had happened in SEA, there were difficulties of coordination between the Army and Air Force, with endemic complaints of delays in delivery of photo reconnaissance prompting discussions of the value of these Air Force operations to Army requirements. The Eighth Army complained on occasion of "inadequate intelligence" and the Air Force replied that Army demands upon limited resources were so extensive that delays and deficiencies were inevitable. These complaints have been echoed in SEA. Other problems also challenged Army-Air Force relations: the size of photos; the inflexibility of Army demands upon Air Force facilities; the use of obsolete equipment, which meant that reconnaissance aircraft could not fly fast enough to avoid enemy aircraft and ground fire, and still fly slow enough to get the photos demanded by ground units.

A dilemma underlay many of the above problems. In South Vietnam, the centralized basing of reconnaissance at Tan Son Nhut impeded the rapid responsiveness necessary to support counterinsurgency forces. To obtain timely reconnaissance and photo confirmation, the Army resorted to light observation





aircraft and hand-held cameras, which the relatively permissive in-country air environment made feasible. The Air Force supported these unsophisticated operations in the form of FACs and the hand-held camera program. North Vietnam and Laos had neither so permissive an environment nor U.S. ground troops and in this out-country war, the reconnaissance jets came into their own. But in the South, the sophisticated and centralized Air Force photo reconnaissance failed to satisfy all of the Army requirements.

### Reconnaissance Mission in SEA 1961-1966

In the years which followed early American involvement in Indo-China, tactical reconnaissance expanded its operations and developed, sometimes without long-range trends in mind, an organizational structure sufficiently sophisticated and flexible to meet increasing commitments. In Laos, the major portion of reconnaissance activity prior to 1964, as in Vietnam prior to 1962, and in Thailand to the present time, emphasized a "pre-hostilities capability," designed to "deny an enemy the advantage of surprise and thus reduce or limit the extent of his aggression." After May 1964, a continuing series of photo reconnaissance flights in Laos confirmed suspicions of increased enemy logistics activity through the Laotian panhandle into South Vietnam. The Premier, Souvanna Phouma, on the basis of this and other information obtained from reconnaissance sources, approved introduction of United States combat support with the understanding there would be no public admission of these operations. Thus successful reconnaissance in a "pre-hostilities" posture led to the expansion of the American commitment, and perforce to an expanded role for tactical reconnaissance in SEA.



The first, and most durable, USAF reconnaissance program relating to Laos was YANKEE TEAM, a systematized photo reconnaissance project begun in connection with the decision of Prince Souvanna Phouma to seek increased American support. Initially, Able Mable (Det 1,33d Tac Gp) at TSN flew all YANKEE TEAM sorties, but in September of the same year, the 2d Air Division proposed to the Commander, U.S. Military Assistance Command, Vietnam (COMUSMACV), that reconnaissance bases be established in Thailand to allow full reconnaissance of Northern Laos without refueling. This was to become more imperative as Operations ROLLING THUNDER and BLUE TREE (reconnaissance over North Vietnam) began to function. In the spring of 1965, two armed reconnaissance areas had been established in Laos: BARREL ROLL in the North; and STEEL TIGER in the South. To speed up validation of targets in these areas, the southern portion of STEEL TIGER was designated TIGER HOUND in December 1965. Later, BARREL ROLL was divided into three sectors, and the southern region into four. interest in Thailand had blossomed into a firm understanding with the Thai government. After some coordination difficulties, Udorn was chosen as a base for 12 RF-101s, which arrived on station in April and May 1965. These aircraft were immediately deployed through BLUE TREE in reconnaissance over North Vietnam designed to obtain pre-strike photo information south of the 21st parallel.

Issues of command and control, and the evolution of tactical reconnaissance operations and organization, had yet to be clearly faced. The Navy favored CINCPAC as the agency controlling such sensitive operations as reconnaissance; the Air Force preferred COMUSMACV, thinking it likely the 2d Air Division would be its deputy for conducting YANKEE TEAM. Through a compromise, CINCPAC





received overall authority, with COMUSMACV possessing a local veto. Equally complicated discussions concerning restrictions to be placed on reconnaissance missions in Laos led to general agreement that low-level bombing had to be discouraged to minimize the possibility of aircraft losses.

While the fiction of a neutralist Laos could best be preserved by limitation of U.S. involvement to airpower, where it could "deny our actions" and where "any accuser is hard put to substantiate his allegations," there were complaints that airpower was not being used effectively because of further restraints. The 2d Air Division sought to use weather flights, which did not require approval of "high levels in Washington" to pick out "targets of opportunity." This was finally allowed. In similar fashion, permission to authorize repressive fire in advance of reconnaissance flights to discourage enemy firing with impunity, was gradually granted to the extent that the U.S. Ambassador to Vientiane and CINCPAC could give it rather than the Joint Chiefs of Staff (JCS). In North Vietnam, BLUE TREE operated, for obvious political  $\frac{21}{}$  reasons, with fewer restrictions.

By the end of 1965, USAF reconnaissance in SEA had expanded from an SC-47 in January 1961 to a total of 45 aircraft. Plans were under way for  $\frac{23}{23}$  expansion of facilities in both South Vietnam and Thailand. Details were being completed on formation of a Tactical Reconnaissance Wing with Headquarters at TSN. Headquarters USAF was being asked to supply Udorn with RF-4Cs, and provision was made for conversion of RB-47s to augment electronic reconnaissance. Plans were also under way to obtain six to eight ADC B-57 electronic countermeasure (ECM) aircraft to counter the growing threat of SA-2 and AAA missiles.





Finally, it was hoped that BLUE TREE reconnaissance operations could be increased. By early 1966, the tactical reconnaissance mission had come of age in Southeast Asia.



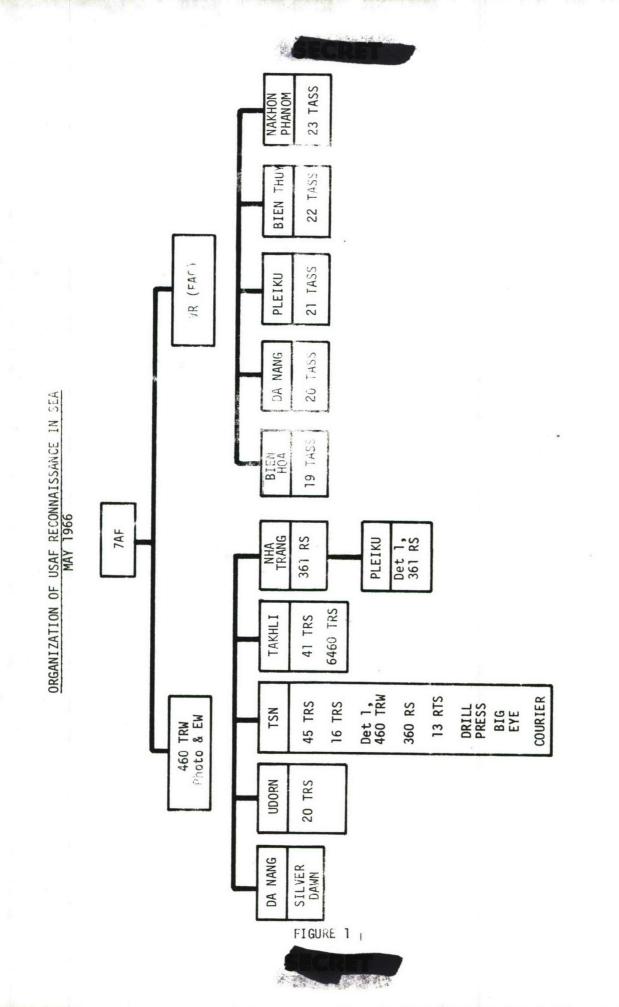


#### CHAPTER II

## DEVELOPMENT OF RECONNAISSANCE ORGANIZATION SINCE JUNE 1966

The year 1966 was particularly important in terms of growth of the tactical reconnaissance organizational structure in SEA. The expansion of reconnaissance in support of increasing American commitments in Vietnam, Laos, and Thailand pressed heavily upon existing facilities and demanded innovation and reorganization. In the beginning of 1966, reconnaissance units assigned to the 2d Air Division (redesignated 7AF on 1 Apr 66) were divided three ways: geographically; for command and control; and for support. Demands from Headquarters, Seventh Air Force, Thailand based units, and the Army competed for Air Force reconnaissance facilities, with little coordination. To provide a cohesive organization, the 2d Air Division requested a PCS Tactical Reconnaissance Wing (TRW) structure for SEA. Approved by Pacific Air Forces (PACAF), the 460th Tactical Reconnaissance Wing was established at Tan Son Nhut on February 1966. The following units were assigned to it: 13th Reconnaissance Technical Squadron (RTS); 16th Tactical Reconnaissance Squadron (TRS); 20th TRS; 45th TRS; 460th Field Maintenance Squadron; 460th Organizational Maintenance Squadron; 460th Armament and Electronic Maintenance Squadron (AEMS); and Detachments 1 and 2 of the 460th TRW. Of these units, Det 2 was located at Udorn, and the 41st TRS, which had previously been assigned to Thirteenth Air Force, remained at Takhli. In April 1966, the 360th TRS at Tan Son Nhut and the 361st TRS at Nha Trang were attached to the 460th TRW "for all purposes." Along with intermediate organizational changes, tactical reconnaissance could boast an extensive and widely distributed number of supporting units (Fig. 1) by







April 1966.

Formation of a separate Tactical Reconnaissance Wing at Udorn, Thailand, was approved by the Joint Chiefs of Staff in August 1966 to bring greater unity to out-country tactical reconnaissance operations. The 6461st Tactical Reconnaissance Squadron, Photo Jet, had already been organized at Udorn in July. In September 1966, in the wake of the formation of the new 432d TRW, the 360th and 361st Tactical Electronic Warfare Squadrons were relieved from assignment to 7AF and reassigned to the 460th TRW, while the 20th TRS, 41st TRS, 6261st TRS, and 6260th TRS, all located in Thailand, were assigned to the new  $\frac{4}{4}$ 

By the end of the year, the Southeast Asia reconnaissance organization had thus increased from four squadrons, with three photo interpretation cells and three detachments, to two wings, two reconnaissance technical squadrons, eight other squadrons, and three detachments, with an increase in aircraft from 67 to  $\frac{5}{143}$ . Within one year, considerable consolidation had brought forth the 460th TRW as an answer to the haphazard scattering of reconnaissance activities in SEA. The consolidation impulse, however, was reversed by September, with the formation of a separate 432d TRW. The legacy of this two-headed reconnaissance operation has not been an entirely happy one. The split proved convenient for the Army when it decided to appropriate in-country reconnaissance under its own jurisdiction. This created difficulties for the Air Force when priorities of in-country versus out-country began to clash, rather than complement each other. Such sharp distinctions between in- and out-country operations may have contributed to later difficulties.



During the first six months of 1967, the only significant increase in reconnaissance aircraft was the acquisition of 16 EC-47s for use in the emerging Airborne Radio Direction Finding program, to be noted in greater detail later. During this period, however, tactical reconnaissance aircraft flew a total of 23,365 sorties in SEA--a 46 percent increase over the number flown in the previous six months. There were 83 aircraft in place in South Vietnam and 61 in Thailand. Organizational changes continued to keep pace with expanding reconnaissance commitments.

A program of redesignating reconnaissance units to reflect wider responsibilities represented many of the changes. The 12th TRS dropped the Photo Jet classification on 1 January 1967. On 1 February 1967, the 361st RS was discontinued at Pleiku, and the 362d was formed to take its place. Introduction of new techniques was reflected in the redesignation of the 360th and 361st Reconnaissance Squadrons as Tactical Electronic Warfare Squadrons. The organization of Detachment 2, 6091st RTS, at Da Nang in May represented another significant and indeed controversial attempt to decentralize certain photo reconnaissance operations. This program will be discussed under TAC RISE. In June the 460th RTS was organized at TSN and assigned to the 460th TRW, with the 13th RTS reassigned to Thirteenth Air Force, and the 6470th RTS was organized at TSN and assigned to 7AF.

In July 1966, the Chief of Staff, U.S. Air Force, (CSAF), directed the worldwide reorganization of reconnaissance. To accomplish this directive, the reconnaissance exploitation facilities of the 460th TRW were reorganized, and an organic reconnaissance products delivery capability was planned. First,



provision was made to place supporting elements of tactical reconnaissance under control of the Wing (previously they had been assigned to 7AF itself), and more importantly, to decentralize the entire operation by establishing partial processing facilities at locations near ground force requestors. The broad plan demanded rapid photo processing stations at Phu Cat to serve the northern corps, and at Tan Son Nhut to serve the South. Second stage photo processing facilities were organized at TSN on a distinctive organizational basis. Finally, to distribute the product of the reconnaissance wing to the ground force requestors in the four corps areas, T-39s, U-3s, and USA aircraft were placed on a more responsive schedule. The "new look," promoted largely in reaction to Army demands for greater photo responsiveness, thus saw relocation of some phase one photo processing/interpretation to expedite delivery. Second and third phase efforts were to be made more effective by improved transportation networks.

The posture of SEA tactical reconnaissance at the end of 1967, under the influence of TAC RISE decentralization of photo processing functions, revealed significant changes from the previous year. With the arrival of the 14th TRS in October, Thailand-based units now possessed complete RF-4 equipment, were divided into two squadrons (11th and 14th TRS), and were working closely with strike forces based at Udorn. At TSN, two squadrons of RF-4s (16th and 12th TRS) gave the 460th TRW the capability of a day/night, all-weather reconnaissance aircraft with optical framing, panoramic cameras, infrared sensors, and side-looking airborne radar. The RF-101s, somewhat more limited aircraft, were assigned to the 45th TRS and the RB-57s were assigned to Det 1, 460th TRW.

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The ARDF program was sustained by the 360th TEWS, 361st TEWS, and the 362d TEWS, assigned to the 460th TRW. Two EB-66 units (41st TEWS and 42d TEWS) assigned to the 355th TFW at Takhli RTAFB provided electronic warfare support. These units contained a mix of all EB-66 models (B, C, and E). In recognition of the increased role played by electronic reconnaissance in SEA, a limited reorganization of 7AF headquarters functions saw this program assigned as the Reconnaissance/Electronic Warfare Division of DOCR. It had formerly been assigned to the Current Plans Division (TACP). DOCR now consisted of three branches: In-Country Tactical Reconnaissance (DOCRI); Out-Country Tactical Reconnaissance (DOCRO); and EW/ELINT operations (DOCRE).

After 1 January 1968, the major organizational structure of tactical reconnaissance was firmly established. The most important development was the introduction of computer storage of all daily target/mission activity in incountry reconnaissance operations. The data bank thus established was able to provide a valid weekly printout of target status, which in turn systematized target scheduling and made possible the recall of statistical information required in recurring reports.

At the end of 1968, the 460th TRW at TSN had 36 RF-4s in two squadrons, 16 RF-101s in one squadron, and two RB-57s assigned to a Wing detachment. The sister Wing, the 432d TRW at Udorn, constituted the only mixed fighter/reconnaissance Wing based on mainland SEA. The 11th TRS (Road Runner) and the 14th TRS (Photo Phantoms) were equipped with 20 RF-4C aircraft each. The SEA structure appeared as follows:





#### 460th TRW

12th TRS (TSN)
16th TRS (TSN)
Det 1, 45th TRS (TSN)
360th TEWS (TSN)
361st TEWS (Nha Trang)
Det 1, 460th TRW (TSN)
460th RTS (TSN)
460th Armament and Electronic
Maintenance Squadron (TSN)
460th Field Maintenance Sqn (TSN)
45th TRS Operating Location (Phu Cat)
Hq Squadron Section (TSN)
362d TEWS (Pleiku)

#### 432d TRW

11th TRS (Udorn)
14th TRS (Udorn)
553d RCS (Korat)
554th RCS (Korat)
Det 1, 553d RW (Nakhon
(Phanom)
41st TEWS (Takhli)
42d TEWS (Takhli)

The expansion and growing sophistication of Air Force tactical reconnaissance between June 1966 and the early months of 1969 did not in themselves resolve all organizational problems. It soon became apparent that the requirements of in-country operations differed sharply from those of Laos, North Vietnam, and other out-country areas which might be involved in the SEA conflict. While in every case, the principal objective was the supplying of information as rapidly as possible to customers, the types of information desired not only caused considerable difficulties themselves, but led to severe interservice disagreement.

In South Vietnam in particular, there were indications as early as 1966 that the Army was not satisfied with the type of photographic information being furnished by Air Force reconnaissance, and even less satisfied with the speed, or lack of it, with which its requests were being met. The organizational problem was to restructure tactical reconnaissance to meet Army needs for "organic" intelligence without destroying the more sophisticated detailed analysis required for long-range planning, and without injuring the service



provided to Air Force units out-country.

This emerged as two problems: (1) the jurisdiction of various fighting components within South Vietnam; and (2) priorities for processing photo information as it was made available by reconnaissance sorties. The problem of jurisdiction was attacked in proposals for the establishment of a Joint Reconnaissance Center (JRC); that of response to information requests in the much larger and more controversial TAC RISE concept.

The U.S. Air Force had relatively secure control over out-country operations from the beginning of the conflict, though the Navy continued to participate in BLUE TREE and YANKEE TEAM operations. As part of the in-country war. reconnaissance developed along distinctly different lines. Four autonomous bodies, the Vietnamese Air Force (VNAF), the Army, the Marines, and the U.S. Air Force were all part of the operation. The first presented a little problem: its resources were distinctly limited, with less than a half dozen planes, a small photographic laboratory, and some photo interpretation (PI) ability. The Marines possessed ten RF-4B aircraft, assigned to the 1st Marine Aircraft Wing, which supported III Marine Amphibious Force (MAF) reconnaissance objectives. On 10 March 1968, the 1st Marine Aircraft Wing was placed under mission direction of 7AF. This eliminated the growing problems of coordination and jurisdiction such as had appeared during Khe Sanh operations.  $\frac{14}{}$  The problem of Army reconnaissance vis-a-vis Air Force operations was considerably more acute. very substantial force consisted of various units performing intermittent reconnaissance, and a large force of Mohawk OV-ls, stationed at some eight bases, providing an organic day/night and adverse weather reconnaissance capability





in direct competition with AF tactical reconnaissance.  $\frac{15}{}$  Equally disturbing was the dual nature of AF reconnaissance itself: the operational patterns of out- and in-country reconnaissance differed sharply. The need for some consolidation and coordination was obvious; the form this should take was less so.

In June 1967, Headquarters 7AF, Directorate of Plans, prepared a study of "Reconnaissance Operations in SEA," to "include consideration of a Joint Reconnaissance Center." This rather limited beginning restricted itself to Air Force efforts alone, noting differences between out- and in-country needs, and further concentrated on only those visual reconnaissance operations which could be accomplished on optical imagery missions. The Air Force was concerned about the effect of such a Joint Reconnaissance Center on efficiency of service to its own customers, as well as to customers of other services, while following the quidelines set forth in MACVR 95-11.

The Air Force was aware of the relative value of requests generated within its own organization; it did not know what guidelines were being followed by other services, and was forced to accept their statements regarding priority at face value. This proved to be an acute problem when demands exceeded available reconnaissance resources. A JRC might ease the difficulty by establishing uniform criteria. On the other hand, the Air Force feared that a JRC might work to the detriment of AF requests, putting a whole range of its resources under control of a body not sympathetic to its own requirements. The study noted that precedents existed for the formation of a JRC; they functioned at JCS and at CINCPAC levels. It suggested that, as a point of

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departure, 7AF in-country and out-country operations be combined into a single reconnaissance center, which could be the nucleus of a future JRC. If a JRC were established, 7AF asked that it have primary jurisdiction rather than MACV. These proposals had been stymied by Army-AF fears of control by factors opposed to the present state of their respective jurisdictions.

Far more important was the problem of priorities. Proposals for establishing a JRC provided a focus for possible consolidation of the rapidly expanding reconnaissance operation in SEA without solving the most pressing problem: response to requests. "Speed is of utmost importance in forwarding reconnaissance requests...in processing...and in delivery." By the middle of 1966, it was obvious that 7AF was experiencing "simultaneous pressures to centralize its reconnaissance-intelligence resources for the air war in the North and to  $\frac{19}{4}$ 

Complaints of unnecessary delays in handling reconnaissance requests began to reach disturbing proportions. Part of the problem lay in the casting of reconnaissance requests themselves. Priorities were assigned according to MACV Directive 95-11, and then, in the case of in-country reconnaissance, were processed through the Army Air Request net to the MACV Tactical Air Support Element (TASE). After further scrutiny, requests were forwarded to the Tactical Air Control Center (TACC), and then fragged to the 460th TRW, which in turn designated what resources were needed to complete the mission as outlined.

After the reconnaissance sortie, the in-flight report was generally broadcast to a Control and Reporting Center (CRC) or Control and Reporting Post (CRP),



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which in turn relayed it to the appropriate agency by the most direct means available. Since the TRW could not communicate directly with all Direct Air Support Centers (DASCs), information at its disposal had to pass through intermediate channels, sometimes several of them, before reaching the requestor. This lack of direct communication between the aircraft and requestor caused unnecessary delays. One obvious suggestion was elimination of the functions of Air Liaison Officers (ALOs), for which the Army had little regard, but were recognized by the Air Force as a symbolic stake in ground operations. As a step toward reduction of ALO responsibilities, it was suggested that during the night, when absent themselves, ALOs should consign their receiving equipment to ground units rather than forcing them to obtain reconnaissance reports through alternative channels. Obviously, if ALOs were unnecessary at night, they were unnecessary by day and the proposal was rejected.

The Army was quick to blame the Air Force for delays in obtaining photo reconnaissance after requests had been made. While the Air Force was sensitive to the problems involved, it held the Army more than partially responsible. As in Korea, the Air Force complained that the Army failed to use photo facilities in the restricted sense for which they were intended. Requests for photographic surveys of vast areas with the hope of picking up meaningful combat objectives at random, rather than using photos for "pinpoint" operations, pressed heavily upon Air Force reconnaissance capabilities.

Again, Army requests for large scale photography meant that a much smaller area would be covered; the Army did not appear to recognize the difficulties involved. To these must be added difficulties generated within the



Air Force itself. Photo interpretation personnel were almost always in limited supply, especially during summer months when tours were being terminated. The alternative here was to skim the photo material more rapidly, or to process material less rapidly. Photo labs professed to opt for the former; the Army alleged the film was processed with less speed and less depth than personnel difficulties warranted, and indeed that it was little better when the processing units were fully manned. Finally, the Air Force was concerned about its out-country operations. Army insistence that photo reconnaissance be centered at the "organic unit" level threatened to deprive the Air Force of its sophisticated, centralized operation at Tan Son Nhut.

The Air Force could not afford to ignore the Army's complaints, however, the latter was prepared to rely more heavily on its own reconnaissance resources and possessed the wherewithal to do it. Thus, though the Tactical Reconnaissance Intelligence System Enhancement (TAC RISE) met with considerable opposition from the outset, Gen. John P. McConnell (CSAF) in mid-1966 directed all commands "to cooperate to the fullest in aggressively implementing" the new program. As has been reflected in a discussion of organizational trends between 1966 and 1969, the main thrust of the plan lay in the establishment of a Photo Processing Interpretation Facility (PPIF) away from Saigon and near the ground units in order to supply immediate photo reconnaissance information. The finished photo processing would be concentrated in the 13th RTS.

Rapid dissemination, however, still rested heavily upon the factor of mobility; photo labs might be placed in "organic units" but they must maintain fixed locations. Although TAC RISE did not envision abandonment of WS 4306,



7AF had fears of further reducing the physical facilities available to processing units--a transfer from steel cubicles on the edge of airport runways to tents in the countryside--and the destruction of the entire photo reconnaissance heritage to satisfy the "rudimentary" and "primitive" requirements outlined by the Army. Seventh Air Force was very reluctant to implement TAC RISE. Half-hearted attempts to fulfill TAC RISE decentralization requirements did not deceive PACAF, which continued to call for full implementation of the new DI fought vigorously to maintain its highly centralized reconnaissance system. Brig. Gen. George J. Keegan, Jr., DI, stated he could see nothing wrong with TAC RISE provided the command intelligence capability were not diluted. His guiding principle, "Air war comes first," summarized the Air Force determination to maintain its commitment to strike forces in its own service before acceding to Army ground force requests. It was inadvisable to compromise the out-country operation in an attempt to satisfy the Army's demand for greater concentration of reconnaissance personnel at a lower level. If the Army's demand were to be met, it should be done by an increase in personnel, not by dilution of the center.

The slow implementation of TAC RISE and the maze of conflicting interests and opinions which attended every step have been covered comprehensively elsewhere. The problem, however, could not be resolved merely by evincing greater responsiveness to Army time schedules in terms of photo production. A radical rearrangement in priorities, in location of photo processing cells, and in delivery facilities might substantially reduce responsiveness time; this would not resolve equally serious problems in the field of collection and interpretation. It became apparent by 1968 that AF aircraft and the camera equipment

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they sustained could not obtain the type of photography the Army requested:

"The essential element of ground force reconnaissance requirement is timeliness. In the interest of timeliness, maneuvering forces and directing organizations are depending more heavily on visual reconnaissance, and accepting less than optimum photographic coverage, both as to scale, the number and type of prints, and the use of unique sensors and processes. The type of Army reconnaissance requirements being submitted to the AF are not suitable for the employment of low altitude split verticle and panoramic cameras which were designed for reconnaissance of small targets."

The Air Force was photographing on a vast scale, but with a level of precision far above Army needs. Lack of specificity in requirements definition and inadequate data management aggravated the imbalance in collection versus exploitation capability:

"The greatest single deficiency in 7AF reconnaissance lies in the serious lack of adequate photo interpreter capability at 7AF level to exploit available photography. Presently, less than 25% of the potential intelligence content of acquired imagery is being extracted...."

This was distressing to reconnaissance requirements for strike forces and could, and has been, remedied by greater emphasis on filling manpower slots in photo interpretation aspects of the 460th and 432d TRWs. The Army wanted not only faster processing, changes in interpretation procedures, but a revamping of the entire type of reconnaissance which the Air Force was collecting. As a disturbing Air Force improvement report noted:

"It appears reasonable to assume that the Army will not be satisfied with reconnaissance, Air Force or Army, which is not immediately responsive to the needs of the field commander. The Mohawk is not the full



answer to these requirements because of system and force deficiencies. It does provide some capabilities not possessed by Air Force reconnaissance systems in SEA and it has enjoyed a reasonable amount of success because it has operated in relatively safe air space. In SEA...the /reconnaissance/ systems must be capable of providing 24 hour surveillance in all but the most severe weather. Neither 7AF nor the Army have such systems at present, but the Army OV-1 companies assigned to each corps and to some divisions come closer to satisfying this requirement than the centralized force and control posture of Air Force tactical reconnaissance posture in South Vietnam."

Part of the solution lay in meeting Army photo requirements by revising photo techniques; this was subsumed into the problem of "survivability" and will be discussed later in this report. Solutions to the problem of delays in photo processing itself have been thoroughly reviewed in a separate report.

A third remedy was related to dissemination of processed photo information, and here the courier force, upon which much hope had been placed when first envisioned in 1966, proved disappointing. While the courier service, according to a recent report, had been instrumental in saving time, unforeseen difficulties arose. One had been the dependence of the Air Force upon the Army for delivery of material to requestors at lower echelons after AF delivery to central rendezvous points; delays in Army delivery service had been blamed by requestors on the Air Force. Furthermore, it had been realized that more work must be done on airdrop techniques, appropriation of aircraft with satisfactory Short Takeoff and Landing (STOL) requirements, and on scheduling.

The frustrations and anxieties of the Air Force as it witnessed the continuing encroachment of the Army upon in-country reconnaissance operations were eased by a sharp upturn in the requests made for AF assistance, after reaching



a low in mid-February 1968. MACV reported in December that "timeliness of aerial photography was...identified as an item of significant improvement since August 1968...." One TASE estimate held that by early 1969, the Air Force was meeting 92 percent of all priority DNLVs. This optimism did not spill over into the area of providing the Army with material meeting its "primitive" specifications, but it was nonetheless encouraging. In the Air Force itself, there was growing conviction that while further reorganization might be necessary in certain instances to improve responsiveness, the "real solution was not organizational but operational." The Air Force could regain the initiative in in-country reconnaissance, and maintain its position outcountry, by rapid development of new detection systems, fuller exploitation of existing equipment and facilities, and more efficient allocation of its trained personnel. And here the work of tactical reconnaissance has been a series of experimentations instructive in themselves and instrumental in the general improvement of reconnaissance contributions to the war effort.





# CHAPTER III OPERATIONS

### General Considerations

Tactical reconnaissance operations in SEA are determined by the ground war, supplemented by airstrikes, in RVN, and the air war in Laos and Cambodia. This sharp division between in- and out-country operations has deeply affected the reconnaissance mission. Differences in requirements for photo reconnaissance, for instance, as had been noted, have led to a retreat by the Air Force from the in-country ground war, while supplying the more sophisticated intelligence demanded by strike aircraft in other theatres. In-country operations, therefore, have seen "the Army Commander [using] his organic aircraft whenever possible to satisfy his needs for specific point reconnaissance."

The outcountry war, on the other hand, has suffered no such invasion from other quarters. Here too, however, a single reconnaissance plan is not feasible; climate, constant changes in target status, and the ever-changing nature of enemy supply techniques require extreme flexibility. In Laos and North Vietnam as well, political factors play an important role in determining how extensive reconnaissance operations shall be at any given time.

Weather conditions contribute one major theme to out-country reconnais-sance. The Northeast Monsoon Plan was developed as a basis for scheduling reconnaissance in SEA when the greater part of North Vietnam is covered by clouds (November through April). During this period, reconnaissance operations are concentrated on major infiltration routes, especially in Laos. After the bombing halt greater attention was given to supply routes than ever before.





The Southwest Monsoon Plan was developed to operate predominately over North Vietnam. During this period (May to October) adverse weather conditions prevail in Southern Laos and South Vietnam and reconnaissance devotes major attention to surveillance of North Vietnam and to infiltration activities along the major Route Packages in the Ho Chi Minh Trail area.

This conception of in- and out-country reconnaissance programs, each with wet and dry seasons, only very roughly approximates the reality, especially when the 1968 bombing halt markedly reduced the reconnaissance requirements over the North. RF-4s based at Tan Son Nhut often flew out-country photo missions and, conversely, out-country reconnaissance assets supported in-country requirements. The latter aircraft did not fly in-country but rather covered a strip of Laos about 20 miles deep along the South Vietnamese Border. COMUSMACV and ground commanders in I and II Corps wanted detailed intelligence on enemy operations in this extended battle area. According to reconnaissance personnel at 7AF, this separation of in- and out-country staff sections did cause some 3/coordination problems along the Laotian/South Vietnamese Border:

"This area, basically an extension of the SVN ground war but part of the YANKEE TEAM reconnaissance requirement, frequently requires up to 50 percent of the outcountry resources. Generally, the requests are similar to those of South Vietnam, differing in requirement for large, rather than small specific areas. This strip of mountain range separating the two countries has poor weather during both monsoons, requiring expenditure of many sorties and frequent requestor coordination of requirements. Constant effort is necessary to prevent duplicate requests."

Other themes may be noted during the period of this study. It has been





necessary to develop an unparalleled technological expertise to meet the increasing sophistication of enemy camouflage and obstacles inherent in working through a tropical vegetation cover. Much emphasis has been placed on the evolution of new equipment, and many frustrations have, not surprisingly, attended its application in SEA. In tune with organizational changes to meet Army demands for rapid delivery of reconnaissance information, operational techniques have been altered and improved.

#### Status of Reconnaissance Operations - June 1966

By June 1966, tactical reconnaissance had at its disposal a variety of operational techniques. The oldest method, Visual Reconnaissance, did not lend itself to clear-cut organization. VR was decidedly "user-oriented"; each service satisfied its own requirements. Air superiority in South Vietnam allowed VR to be conducted on a casual and somewhat haphazard basis. FACs were expected to perform VR when possible, and did so, though not without some difficulty. When the 0-2 with its parallel seating came in-country in 1967, the FACs consistently found themselves making left turns, because of the difficulty of spotting meaningful targets by looking across the cockpit and out the window. "The predominately left turn activity by the FAC established a dangerous pattern when enemy ground fire was being considered."

As the months progressed, the FACs became more experienced and the value of their Visual Reconnaissance also increased. The somewhat haphazard nature of the VR program lent itself to serious difficulties. The failure of the Marines to coordinate their VR work with the Air Force and Army resulted in a lack of adequate reconnaissance support for Marines around Khe Sanh in late



January 1968. During the Tet offensive, the VR program was seriously disrupted by preoccupation of FACs with other demands, aircraft losses, and unprecedented ground fighting. Increasing emphasis on other detection devices, hostile fire, thick foliage, and sophisticated enemy camouflage have affected the VR program in SEA. On the other hand, ground units maintain that they rely very heavily on VR, and FACs indicate that they regard their VR as one of the most important reconnaissance efforts being performed in SEA. The introduction of the Starlight Scope into the night VR program in February 1967 has increased the effectiveness of reconnaissance. Attempts to establish an effective system of exploiting the analysis generated in this and other VR programs by coordination of information gathered by the various services was a continuing problem.

All other reconnaissance methods depend upon detection devices of one sort or another, and SEA has been a fruitful forum for experimentation. Some new devices, such as the Starlight Scope, Low-Light-Level Television (LLLTV), Side-Looking Airborne Radar (SLAR), and Infrared (IR) have been highly praised for their potential but have not always proved effective in operation. The LLLTV was tested in Laos in 1968, but bad weather conditions made tests inconclusive.

Night IR had been hampered by low flight altitude requirements and high humidity in SEA. USAF SLAR was handicapped by the lack of cockpit readout and moving target indicator capabilities possessed by the Army OV-1, which could be used more advantageously in a permissive environment.

Electronic Reconnaissance, on the other hand, had proved valuable in

collecting technical information concerning the parameters and location of NVN radar. The EB-66C series of this aircraft is primarily an Electronic Support Measures (ESM) version and has, to a limited degree, an active electronic countermeasures (ECM) capability.

Electronic Countermeasure/Electronic Intelligence (ECM/ELINT) and Significant Intelligence (SIGINT) were used effectively but not without drawback. Sophisticated data gathering equipment in these two programs could not be fully exploited because of insufficient means by which to interpret the material gained. More concern was directed toward deficiencies in camera equipment, and gave rise to the larger question of "survivability," which reached something of a crescendo in 1968.

Finally, recent developments in "covert reconnaissance," such as the use of the U-2, SR-71, and especially drones, have been watched with great interest. Since late 1967, these vehicles have constituted one of the greatest intelligence sources over high-threat areas. The 7AF force improvement report stressed the promising results of the use of drones. Increasing ground fire in Laos and the longstanding hazards in NVN have increased hopes that the drone might  $\frac{12}{2}$  eventually replace reconnaissance aircraft in the most dangerous areas.

These reconnaissance devices have been used in several important long-term operations in SEA. Some of these were already well-established by June 1966; prominent among them were YANKEE TEAM and BLUE TREE. YANKEE TEAM operations have been described in terms of the growing American commitment in Laos, where they constituted a CINCPAC-directed air reconnaissance program against

selected targets and lines of communication after May 1964. A joint Navy-Air Force Operation, YANKEE TEAM, gradually reverted to a predominantly AF effort after April 1965, when the total number of sorties per month jumped from an average of 70 to 180, and when AF participation increased from less than 50 percent to more than 75 percent. By the spring of 1966, monthly sortie rates were consistently exceeding 500, with the great bulk being directed by the Air Force. RF-101s and RF-4Cs shared the sortie total. By December 1966, 4,940 sorties had been flown by Air Force aircraft.

Meanwhile, increasing evidence of enemy infiltration led to implementation of the CRICKET program. The CRICKET mission, beginning in January 1966, was designed to conduct visual reconnaissance and FAC operations in support of the STEEL TIGER interdiction effort in Southern Laos. Composed of twenty 0-1 aircraft and, by the end of February, of four AC-47s to provide night reconnaissance, its "immediate results far exceeded all other armed reconnaissance efforts in  $\frac{15}{\text{Laos.}}$ "

BLUE TREE, a program of photo reconnaissance against selected targets and lines of communication in NVN, was also directed by CINCPAC and staffed by AF and Navy aircraft. It operated much in the same manner as YANKEE TREE. Each month, MACV published a BLUE TREE-YANKEE TEAM Reconnaissance Plan for Laos and North Vietnam, listing authorized targets, mostly LOCs and border interdiction routes. This framework of targets and priorities was sent to the DI target materials section of 7AF. Since MACV did not allocate all available out-country AF reconnaissance, the Seventh Air Force also drew up guidelines for needs in this theatre. The coordinated total monthly requirements then went to the DO





out-country reconnaissance branch, which fragged the 432d and, if necessary, the  $\frac{17}{460 \text{th}}$ .

Specialized programs were developed to meet strategic planning requirements, and others to complement strike forces. BLUE SPRINGS, a CINCPAC-conducted drone photographic reconnaissance mission in SEA, was in operation by early 1967 and was to have a deep impact on long-range tactical planning. ly, TROJAN HORSE, an operation of SAC U-2 aircraft from Bien Hoa or other bases, required to photograph selected targets, supply routes, and areas in support of the JCS, the Defense Intelligence Agency, COMUSMACV, CINCPAC, and other commands interested in SEA, complemented tactical reconnaissance but did not share a common operational command. Strike programs also required support. BARREL ROLL (strikes in Laos against personnel and equipment from North Vietnam in support of Pathet-Lao and Viet Minh), ROLLING THUNDER (strikes in North Vietnam), STEEL TIGER (strikes in southern Laos against personnel and equipment from NVN in support of the Viet Cong), and subsidiary operations represented an increasingly complex out-country war. ROLLING THUNDER was perhaps the most demanding. Here RF-4Cs and RF-101s, working singly or, in high-threat areas, in pairs, accompanied strike forces at times and were accessible to tankers for post-strike refueling.

One of the most significant programs developed in tactical reconnaissance between 1966 and 1969 was PHYLLIS ANN, renamed Project COMPASS DART in 1967. Conceived by the Army as a method to detect the location of enemy ground units by pinpointing their transmitters through an Airborne Radio Direction Finding program, Project COMPASS DART directed the adaptation of RC-47s to an ARDF



capability. The Air Force was able to enter the program since it had the aircraft in its inventory to perform the mission. After much discussion, the Air Force and Army were allowed increases in aircraft, bringing the proposed mix to 57 Army U-6s and U-8s and 47 AF RC-47s by the beginning of 1967. By mid-1969, aircraft increases were: 57 AF EC-47s and 72 Army U-6s, U-8s, and U-21s. The net effect of this JCS decision was to split the ARDF responsibility between the Army and the Air Force. In the spring of 1966, the Air Force established the first of three reconnaissance squadrons for EC-47 crews (aircraft as renamed for electronic warfare) and assigned them to the 460th TRW at TSN. The first aircraft arrived on 14 May 1966; as additional aircraft arrived, the 360th was supplemented by the 361st TRS at Nha Trang in October, and the 362d TRS at Pleiku on 1 February 1967. On 15 March 1967, all three squadrons, as has been noted, were redesignated TEWS.

ARDF represented a singularly successful area of cooperation between the Army and Air Force in tactical reconnaissance. The division of effort between the two services led to establishment of a coordinating agency under the control of COMUSMACV. The coordinating committee, as devised in 1966, has played a limited role, however, receiving tasking requirements from MACV and passing them on to subordinate units. Because of the greater endurance of the EC-47 craft, the Air Force has received the job of covering STEEL TIGER and TIGER HOUND strike operation areas in Laos, the coast of NVN and western portions of SVN. The operation has functioned well, within definite territorial limits even beyond those established by MACV itself: "Only the generally permissive



environment created by U.S. and Allied air supremacy makes the EC-47 a suitable aircraft for the operation." The Army has been highly satisfied with Air Force efforts in the EC-47 program, but ARDF has not been foolproof. Enemy transmitters on vehicles are extremely difficult to fix. One attempt to fix the location of a North Vietnam division failed, for instance, even though the transmitter was pinpointed, because the division had moved east of the fix, leaving its transmitters at the border site. Other limitations, such as weather conditions, basing of aircraft too far south for effective deployment in Laos, artillery fire, and disorientation of other detection systems by ARDF equipment, must be noted. In general, however, it has been a bright spot in the Air Force tactical reconnaissance program in SEA, and an area of effective  $\frac{24}{}$ 

#### Expansion of Operations: June-December 1966

At the beginning of July 1966, Air Force reconnaissance "Force Structure"  $\frac{25}{}$  in SEA consisted of the following:

Location	RF-101	<u>RF-4</u>	RB-57	EB-66B	EB-66C	EB-66E	EC-47
TSN	15	19	2	0	0	0	0
Udorn RTAFB	16	10	0	0	0	0	0
Takhli RTAFB	0	0	0	12	6	0	0
Nha Trang	0	0	0	0	0	0	0
Pleiku	0	0	0	0	0	0	0

These statistics suggest a general pattern which was to remain true for the entire period of this report: TSN would remain the chief center of RF-101 and



RF-4C aircraft. ELINT/ECM aircraft would be stationed at Takhli, and additional ARDF aircraft would be assigned to TSN, Pleiku, and Nha Trang. There would be an increase in aircraft, and a notable increase in the number of RF-4s.

The most important new program introduced during the latter half of 1966 was MUSCLE SHOALS, a dramatic attempt to master the increasingly serious infiltration problem along the Ho Chi Minh Trail. Begun officially on 16 September 1966 by Secretary of Defense Robert S. McNamara's decision to develop a sophisticated interdiction system, MUSCLE SHOALS was designed to constitute a strong point obstacle subsystem across Vietnam just south of the Demilitarized Zone (DMZ), and an air supported anti-infiltration subsystem extending westward from the strong/point obstacle subsystem into central Laos to include the Ho Chi Minh Trail. Later it was restricted to an antipersonnel and antivehicular detection  $\frac{26}{}$  system.

While the system did not form a part of tactical reconnaissance per se, its implications for reconnaissance were clear enough: sensing devices—detecting enemy foot or vehicular movement—with aircraft poised to receive sensor signals, and an infiltration surveillance center prepared to analyze incoming information, would complement the work of tactical reconnaissance in North Vietnam and Laos. Not until October 1967 was Task Force Alpha formed under Brig. Gen. William P. McBride to build the ISC at Nakhon Phanom. MUSCLE SHOALS was not conceived "as a panacea or a final solution to the interdiction problem."

Indeed, after beginning the operation in December 1967, its manifold technical and political problems became increasingly apparent: "By 31 March 1968, not a single one of these devices had functioned satisfactorily



in the field under combat conditions...." Accordingly, more orthodox means of aerial reconnaissance remained the keystone to the surveillance effort in the North.

Reconnaissance Operations: Jan-Dec 1967

During the first six months of 1967, Air Force tactical reconnaissance aircraft flew a total of 23,365 sorties in SEA. This represented a 46 percent increase over the previous six-month total of 16,073 sorties. Combat losses during this six-month period were 12 aircraft; 13 had been lost in the last six months of 1966. By the end of 1967, the new high level of reconnaissance activity established in early 1967 had become a permanent phenomenon. Reconnaissance data successfully demarcated new infiltration routes early in 1967; the enemy was forced to open yet newer routes. EB-66 flights were shifted south in February due to increasing MIG activity. During the Tet truce period, reconnaissance was intensified, and particular emphasis was placed on logistics activity and on associated facilities along navigable rivers, off-load points, supply caches, and transshipment points. An important milestone in reconnaissance photography came with the successful documentation of night-  $\frac{32}{32}$ 

The growing threat of SAMs and the increasing number of MIGs on station during this period prompted emergence of the survivability question in an acute form. The problem, of course, was of concern to planning agencies from the beginning and appears in discussions as early as 1965, when restrictions were placed on reconnaissance flights to avoid the embarrassment of being  $\frac{33}{\text{SOMPASS DART aircraft were hit by ground}}$ 



fire in early missions, and their minimum altitude was raised to 2,000 feet.

Four RF-4Cs were lost in January 1967 alone, and after the fourth loss, the

Commander, 7AF, imposed several restrictions on photo reconnaissance missions
in high-danger areas: flights were to be timed to coincide with EB-66s on
station time in support of the strike package; all daytime photo reconnaissance
flights into high-threat areas were to be in groups of two; maximum use would
be made of the RF-4C night capability; until ECM was available, single reconnaissance aircraft would be escorted in very high-threat areas, insofar as
practicable, by QEC-180 pod-equipped F-4Cs; under normal conditions 12 to 24
hours would elapse between strike and photo reconnaissance. Further restrictions
were instituted in February 1967. Night photo cartridge missions in dangerous
areas were required to exceed 4,000 AGL and infrared missions 3,000 AGL. A
minimum photo altitude of 12,000 AGL was to apply on all day NVN targets unless
directed otherwise.

Three photo reconnaissance aircraft were lost between 1 February and 1 May. Nevertheless, the dual accompaniment raised the morale, although missions were cramped. Photographic confirmation of the presence of SAMs in the DMZ in mid-May induced 7AF to place a FAC in the rear cockpit of RF-4Cs for strikes against SAMs, because of the "increased survivability of higher performance jets over  $\frac{36}{}$  the 0-1 aircraft" in this danger zone.

In August, the shooting down of an RF-101 led to an order equipping all reconnaissance aircraft operating within the high-threat area of NVN with two operational ALQ-71 ECM pods, which jammed guidance systems in SAMs and occasionally AAA.



In September, a 4,500 minimum altitude restriction was placed on day reconnaissance missions over North Vietnam as a result of the possible loss of one of the RF-101s on a low level mission on 2 August 1967. A requirement that fighter aircraft escort all reconnaissance aircraft in the high-threat area served to limit missions to two per day by September.

The obvious solution to the problem was the development of camera equipment which could shoot adequate photography, while the plane remained at safe altitudes and maintained sufficient speed to reduce the threat of enemy fire. The loss of the four RF-4C aircraft in January 1967 represented 80 percent of all losses of the RF-101 to that date, and in the absence of rapid conversion of tactical reconnaissance to RF-4Cs or something even more maneuverable, attention turned to camera equipment. The losses were attributed to the fact that the installed camera lenses required the aircraft to fly at an altitude of 4,500 AGL during a target run. This altitude was within range of intense enemy ground fire from automatic weapons. That this problem had not been resolved by the end of 1968 is evident in the language of the 7AF improvement report of September 1968:

"The requirement for photography of adequate scale and resolution...is common to both Air Force and Army requestors...The limited capability of RF-4C camera systems for satisfying these requirements has made it necessary to retain a squadron of RF-101s in SEA. The RF-101 performs this mission exceptionally well, but it lacks the day-night versatility of the RF-4C and is therefore day mission limited. This also makes it an uneconomical system for employment to South Vietnam where the air defense environment does not demand high speed flight for aircraft survival. The RB-57 has served as a test bed for advanced cameras and infrared

sensors. The varied camera configuration and extended combat range have made it extremely useful for day photography of large areas and communication lines in NVN and Laos. The new ITEK and Fairchild high resolution panoramic cameras tested in the RB-57 have verified the increase in intelligence information and coverage that can be obtained with current state of the art equipment. Systems of this type provide target resolution at medium and high-flight levels that exceeds that obtainable with RF-4C and RF-101 cameras at low level. Cameras of similar resolution and coverage installed in the RF-4C would increase its versatility and permit greater latitude in the choice of employment tactics..."

The need for safe altitudes was especially applicable for the night photo cartridge. The strongest available cartridge did not provide sufficient light for night photo operations much above 3,000 feet AGL. Ground fire made this altitude unsafe in-country and highly dangerous out-country. The latter environment was so nonpermissive that strip missions were not often scheduled and even three or four photo flashes in sequence made an aircraft very vulnerable to leading ground fire. Locating a point target at night over Laos without accurate navigation aids required extra photo shots bracketing the probable target location and a pilot had to balance the "insurance" of five shots against the risks. In 1966, 7AF established a Southeast Asia Operations Requirement (SEAOR 56) for a brighter photoflash cartridge.

The requirements for higher altitudes and improved standoff capabilities pervaded photo reconnaissance operations in high-risk areas. According to the 7AF improvement report, the need existed for a:

"...passive system with adequate resolution and coverage.... Enemy defenses and the need for counter tactics require the maximum degree of sensor flexibility. Optical camera systems currently offer the

only means of satisfying the need for high-level target resolution. The cameras in the RF-4C provide satisfactory resolution if employed at optimum altitudes, but the present configuration will not permit standoff operations at a distance of 8-10 miles of flight at all altitudes to afford maximum safety without sacrificing mission effectiveness."

Pilots and navigators have been quick to affirm the problem involved. These impressions have been adequately publicized, and were summarized effectively in the End-of-Tour Report by Col. Wendell L. Bevan, Jr., Commander, 432d TRW, Udorn RTAFB. After commenting on the manifest advantages of stereoscopic photography over non-overlapping photography in detecting detour efforts on interdiction routes, in uncovering supply caches, in noting road construction, and in discovering hideouts, Colonel Bevan stated the RF-4Cs standard camera configuration prevented pilots from gaining needed photo intelligence when maintaining high speed and while maneuvering to escape enemy fire. The concentration of AAA defenses along the LOCs, the SAM environment in NVN, and prevailing weather conditions forced photo reconnaissance about 5,000 feet AGL. Even at this altitude, exposure to heavy AAA was nevertheless a serious threat and RF-4Cs were required to gather data while moving at high speed.

Other photographic equipment had similar deficiencies. The KA-56 low-altitude panoramic camera worked well below 1,000 feet AGL; the KA-55 high altitude panoramic camera proved equally effective above 30,000 feet AGL. In the 5,000-10,000-foot block, the low pan camera's small scale made it inconvenient, sometimes useless. To use the high altitude camera meant traveling at limited speeds to obtain stereo overlap. Being forced to go at a slow speed in high-risk areas had brought "general agreement" that this had caused the

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high combat loss rate.

Using its own ingenuity, the 432d TRW at Udorn began in September 1968 to devise a suitable medium altitude camera by mounting both high pan and split vertical framing cameras simultaneously. Despite objections from the "reconnaissance community," in general, the KA-55 high pan camera was successfully mounted in the mid bay while retaining split vertical KS-72 framing cameras in the aft bay:

"This represented the first real step toward solution of the medium altitude camera deficiency since the RF-4C entered combat two and one half years ago. It provided the aircrews with vitally needed flexibility in acquiring targets. Where wide lateral coverage was required and threat environment would permit, the KA-55 high pan camera could be employed at 480 KTS and with light maneuvering. Where the threat became too intense, where weather forced acquisition below 10,000 feet, or where pinpoint or narrow strips were covered, the KS-72 split vertical cameras could be employed, exploiting the full speed and maneuverability of the aircraft. At higher speeds, the high pan camera could be operated at 12% overlap and although not obtaining stereo, it gave panoramic backup to the selective stereo coverage of the split vertical cameras. Simultaneous coverage acquired by this configuration was of far greater exploitable value than had been achieved thus far in the war."

These improvements, more the product of improvisation than long-range planning, were welcomed, but have not yet resolved entirely this aspect of the "survivability" problem.

A smaller experimental program was launched in April 1967 with the initiation of the FAC hand-held camera operation. The objective was to evaluate the ability of the FAC to provide meaningful intelligence data through

the use of 35-mm photography. Several reasons were subsequently cited for this program. First, photographic evidence of FAC VR sightings was of considerable value in determining interdiction strike and restrike points. Second, BDA obtained through photographs was much more accurate than assessments arrived at by unsupported VR. Third, FAC hand-held photography provided more nearly real time intelligence than any other photographic resource then employed in SEA. Finally, the FAC, because of his familitarity with the target area, was able to acquire photos providing features otherwise unobtainable. The program also had the advantage of being able to operate in poorer weather conditions and over areas of opportunity, while the TAC recon missions were all preplanned. The program remained in this test status until late 1968.

#### Reconnaissance Operations: Jan-Dec 1968

Several important operations characterized tactical reconnaissance incountry during 1968. On 15 January 1968, the In-country Operations Reconnaissance Branch assumed responsibility for directing Project WAYSIDE operations, which concerned cartographic mapping and High Intensity Radio Air Navigation (HIRAN) controlled photography of South Vietnam. DOCRI also sponsored a team of officers to investigate means of improving artillery/reconnaissance coordination, and it was concluded that additional reconnaissance personnel should be assigned to the DASCs to provide 24-hour reconnaissance representation there, since the DASCs coordinated exchange of information. The courier force as envisioned in TAC RISE was outlined on an operational level by the 460th TRW in February and implemented on 15 March, with plans for twice-daily delivery to all requestors throughout the four corps areas. An interim program was outlined for air-to-air refueling of tactical reconnaissance sorties directed



to the geographically remote areas of I CTZ and northern II CTZ. In June, the 460th TRW was directed to develop and conduct a COMPASS COUNT Operational Employment Test program. COMPASS COUNT was the RF-4C laser sensor system developed in response to SEAOR 87, and was designed to provide a semi-passive night photographic reconnaissance capability to replace the current cartridge illuminated system, which had proved vulnerable to enemy ground fire. Five aircraft equipped with the laser system deployed to the 432d TRW in April 1969.

Out-country tactical reconnaissance also expanded its responsibilities in 1968. On 10 February 1968, it assumed responsibility for fragging Marine reconnaissance aircraft and Marine target requests. DOCRO participated in Project PAVE WAY (evaluation of laser directed ordnance) in May, and six RF-4C sorties were flown to provide photographic evidence of mission effectiveness. Reconnaissance over North Vietnam was reduced in April, and then suspended for one month after the bombing halt was announced in November. President Lyndon B. Johnson specifically excluded reconnaissance aircraft from the ban, but NVN reacted to the prospect of continuing sorties by declaring them aspects of "offensive action" against its government. As noted in the 1968 MACV Command  $\frac{53}{\text{Mistory:}}$ 

"To cover this delicate situation, JCS announced three programs for surveillance of the north: the currently authorized drone and SR-71 effort; manned tactical reconnaissance effort south of 19 degrees north latitude and reconnaissance in the peripheral area. The first program and the last were already in operation and would remain so. The new manned reconnaissance effort, on the other hand, had two basic purposes. One goal was 'to determine as soon as possible, the reaction of intentions of the enemy with regard to a manned





tactical reconnaissance program south of 19 degrees.' The second was 'to accomplish that reconnaissance necessary to determine the status of resupply or troop buildup and threat to the Free World Forces south of the DMZ.'"

When resumed after a short pause, several precautions were taken to minimize  $\frac{54}{}$  risks for unarmed reconnaissance aircraft. RF-4Cs assigned to the lower route packages of NVN were escorted by F-4Ds of the 432d TRW's strike forces.

Well-established programs continued to make significant contributions. The two reconnaissance Wings in SEA processed 72 million feet of original and duplicate reconnaissance film. Much of this film, especially from Laos and NVN, also went to higher headquarters and to national intelligence agencies for further exploitation. The ARDF program saw EC-47 aircraft consistently flying more than 900 sorties each month. During the Tet offensive, much significant work was done, and the Mobile Riverine Force found itself almost completely dependent upon ARDF fixes, when "other sources of information became extremely limited."



#### CHAPTER IV

# 1969 AND BEYOND: AIR FORCE TACTICAL RECONNAISSANCE IN SEA

By the end of 1968, tactical reconnaissance had reached a plateau in its development in SEA. Aircraft in place, for the first time, remained nearly stable; even the gradual substitution of RF-4Cs for RF-101s was temporarily suspended. The RF-4Cs and EC-47s constituted most of the reconnaissance force structure. In-country operations, as before, emphasized visual reconnaissance and photo reconnaissance by day and infrared by night. The less maneuverable RF-101 was largely confined to in-country sorties, whereas in 1966, it had accomplished more work out-country. Out-country operations, however, showed how flexible the operation must be to accommodate changing requirements. FACs provided most of the VR accomplished and also made striking reconnaissance contributions through the hand-held camera program. As a result of the on-going experimental operation, 225 Asahi Pentax cameras, equipped with pistol grip handles and 200-mm lenses, were purchased for use by in- and out-country FACs in February. In addition, six cameras were provided for use in the EC-47 operation. The acquisition of these cameras increased the capability of the program approximately 500 percent. The information gained by the hand-held camera program ranged from BDA to pictures of equipment and supplies awaiting transshipment. It was very valuable overall, and provided the Air Force with an ability to "secure good timely photo coverage of many items of interest which would otherwise be lost...."

Photo reconnaissance constituted nearly all of the sortie burden, with the



RF-4Cs performing approximately 80 percent of it. The sharply decreased role of the RF-101 in the out-country war between 1966 and 1968, as a prelude to its ultimate phasing out, was a major theme during this period. Of significance was the expansion to Thailand, with EB-66s and RF-4Cs being fragged on a gradually increasing basis. To be noted also were the importance of the bombing halt on tactical reconnaissance fragging of the RF-4C, the evaporation of the RF-101s' out-country role, the expansion--in sorties, and geographically-- of the EC-47 program, and the lesser but still important effects of the bombing halt on ECM.

These developments were reflected in larger areas. In March 1968, COMUSMACV had taken a predictable step in responding to the growth of Army and Marine reconnaissance, and had developed a Single Manager system for control of tactical air resources in SVN. The role of Army reconnaissance could no longer be regarded as a temporary phenomenon, to pass away when AF reconnaissance adjusted itself to the requirements of ground forces. The extent of Army participation, indeed, defies analysis, and when combined with continuing large scale efforts by the Navy, Marines, SAC, and JCS, Air Force tactical reconnaissance contributions in-country constituted only a small fraction of approximately 30,000 monthly missions. The Army was also engaged in outcountry reconnaissance on a substantial scale, running at a constant 20 percent of the Air Force effort. These developments are not alarming so much in themselves, as for the reasons which have prompted other agencies to assume so much of the reconnaissance burden.

A brief survey of Army/Air Force problem areas in reconnaissance serves

to illustrate the entire interservice dilemma in this area. The first problem was the difference in definition of a completed or effective mission. Army statistics normally evidenced a higher effectiveness rate than those of the Air Force. The Air Force considered a mission complete if it obtained 85 percent usable photo coverage of area and strip targets, and 100 percent usable photo coverage of pinpoint targets on day missions, 65 percent on photo and infrared at night. By contrast, the Army counted a mission complete or effective if it obtained coverage of any part of the target area. If the Air Force had used the Army criteria, it would have achieved nearly 100 percent complete or effective rates.

The nature of the photo targets of the Army and Air Force also served to complicate the situation. The average Air Force target was 10K square, while that of the Army was 4K. The aircraft used by the Air Force were much faster. Thus, it was harder for them to photograph a road, for example, than it was for the low, slow Army OV-1. The targets requested/completed ratio for each service also had to be considered. Here, again, the Army percentage was almost 100 percent of requested targets completed, while that of the Air Force was much lower. This was primarily due to a different method of requesting reconnaissance coverage. The requirement for the Army was established daily by the Corps' G-2. This requirement was based on the number of aircraft available and did not exceed the ability to complete the request in terms of aircraft. The Air Force, on the other hand, received requests from agencies throughout the theatre irrespective of aircraft available to fill them. Air Force missions were fragged by the Seventh Air Force based on the priority of targets. Thus,

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the Air Force had a large number of targets that could not be flown because of  $\frac{7}{}$  a lack of aircraft resources. Weather conditions were also a factor that had to be considered. The chances of a 10K square area having significant cloud cover were much greater than that of a 4K area. The ability of an OV-1 to get under a 1,500 foot ceiling and photograph a target was obviously much greater than that of an RF-4 or RF-101.

Several of these problems appeared to be in the process of solution in late 1969. A proposal had been made, and approved in principle, for standard-izing terms and criteria for both Air Force and Army reconnaissance missions. If these proposals were adopted, they would go far toward eliminating some of the disparity and confusion over the effectiveness of the reconnaissance effort by both services. (APP. I.)

More questions have been raised than answered during the three years. More sophisticated electronic reconnaissance, better procedures for satisfying Army and Marine requirements, far more efficient data exploitation of photographic material, more effective selection of reconnaissance targets, establishment of priorities, and greater coordination are salient problems. The conflict between Air Force and Army regarding photographic material, for instance, has occurred in rarified sectors of major commands, and comprehension of the extent of Army dissatisfaction at various times during the past three years had permeated lower levels. Coordination difficulties prompt FACs to ask what happens to the material collected by AF reconnaissance aircraft which they see covering their zone; they claim it is never placed at their disposal. While great strides have been made in more rapid processing, interpretation, and delivery of material,

these changes have taken place within the traditional framework of concentrating functions in specialized agencies. A radical rearrangement of at least part of this process has been contemplated, giving FAC functions to reconnaissance pilots, allowing them to make the necessary observations and call in strikes immediately.

Air Force experience with photo reconnaissance in SEA revealed a fundamental dilemma: high performance sophistication was imperative out-country and often a detriment in-country. The RF-4 and RF-101 with their low altitude, split vertical, and panoramic cameras were designed for small area targets and for a nonpermissive environment such as Laos and North Vietnam. However, in the South, the relatively permissive environment allowed the employment of low performance aircraft for small area targets. Considering the centralized basing of Air Force reconnaissance jets at Tan Son Nhut and the resulting distribution delays, the various ground commanders naturally turned to their own organic, locally-based aircraft. These included OV-ls and airborne observers with handheld cameras. Since large area, high altitude photo missions required more sophisticated cameras than the Army had, a significant number of these requirements went to the Air Force. Yet, the RF-4 and RF-101 were not designed for this mission that often resembled a mapping/mosaic function. As a result, the Air Force objected to so many Army requests for large area targets unsuitable for the high performance jets and the Army contended that photos taken by such jets did not reach ground commanders in a timely manner.

This is not to say that South Vietnam provided such a permissive environment that the high performance capability was superfluous--as of June 1969, a

total of 16 RF-4s and RF-101s had been lost in-country. But the situation did suggest the limitations of the RF-4/RF-101 systems and the need for a wider choice of photo reconnaissance capabilities. The Reconnaissance Chief for the 7AF Directorate of Operations made this point:

"One highly significant issue is, 'Will we design and organize our future force to operate effectively in a relatively permissive environment in support of ground forces?' The reconnaissance role is being performed today by light aviation and a few OV-1s. Visual reconnaissance is the primary collecting medium and the hand-held camera program is providing confirmation. Air Force high performance aircraft are performing a mapping/mosaic function that could better be accomplished by a vehicle such as the C-130 with multiple large format cameras. If the Air Force is to regain the effective, competent reconnaissance role it must equip with a VSTOL (vertical short takeoff and landing) aircraft with simple effective camera systems and make it responsive to division or corps level requirements and control."

The scope of AF reconnaissance itself shows few signs of major change before January 1971; until then, requirements for RF-4C, RF-101, RB-57, EB-66, and EC-47 aircraft will be much the same. Shortly, thereafter, however, the Light Armed Reconnaissance Aircraft (LARA), with its greater photographic flexibility, is expected to go a long way toward elimination of "survivability" problems debated at present. This, of course, depends upon the possibility of the LARA type being made operational by that time. The RF-111, conceived as an excellent reconnaissance aircraft because of its great range of speed and maneuverability, continues to be considered a future source of reconnaissance strength. The responsiveness controversy is reflected in plans to obtain an increased number of STOL craft. Plans for inclusion of drones in tactical

commands remain as yet unresolved by the Air Staff.  $\frac{10}{}$ 

Concerted efforts are being made to improve night reconnaissance effectiveness through a program of conferences sponsored by Task Force Alpha at Nakhon Phanom.

As summarized here, the U.S. Air Force reconnaissance is sustaining itself in a wartime environment which poses problems of priorities and tactics unparalleled in complexity and difficulty.

#### FOOTNOTES\*

#### CHAPTER I

1.	(U)	AFM 2-6, pg 3-2,a.
2.	(TS)	CHECO Rprt, Hq PACAF, DOTEC, "USAF Reconnaissance in SEA, 1961-1966," 25 Oct 66.
3.	(U) (S)	AFM 2-6, pg 3-2,b. Ltr, Hq PACAF, DIP to DOTE, subj: Project CHECO Rprt - Recon in SEA (U) (DOTE Memo, 8 Dec 69), 12 Jan 70. (Hereafter cited: DIP Ltr.)
4.	(S/NF)	End-of-Tour Rprt, Col Wendell L. Bevan, Jr., Comdr, 432d TRW, 3 Sep 68-7 Jun 69.
5.	(U)	AFM 2-6, pg 3-2,e.
6.		Ibid.
7.		<u>Ibid</u> , pg 3-3,a,b.
8		<u>Ibid</u> , pg 3-4,c,2 (1).
9.	(S) (S/NF)	Ltr, Hq PACAF, DORC to DOTEC, subj: Project CHECO Rprt, Recon in SEA, Jul 66 - Jun 69, 13 Dec 69, w/Atch; Atch, CHECO Rprt, "Recon in SEA, Jul 66-Jun 69," 14 Jul 69.
10.	(S/NF)	CHECO Rprt, Hq PACAF, DOTEC, "The EC-47 in SEA" (20-154), 20 Sep 68. (Hereafter cited: "The EC-47 in SEA.")
11.	(U)	USAF Historical Study Nr 72, USAF Historical Div, Air Univ, "USAF Ops in the Korean Conflict, 1 Nov 50-30 Jun 52," 1 Jul 55, pg 221.
12.		<u>Ibid</u> , pp 224-226.
13.	(U)	AFM 2-6, pg 1-3,b.
14.	(S)	CHECO Rprt, Hq PACAF, DOTEC, "Air Ops from Thailand, 1966"
	(C)	(20-27), 31 Oct 67, pg 3; CHECO Rprt, Hq PACAF, DOTEC, "Interdiction in SEA, 1965-1966" (20-22), 25 May 67.
15.	(TS)	CHECO Rprt, Hq PACAF, DOTEC, "USAF Operations from Thailand, 1 Jan 1967-1 Jul 1968" (20-35), 20 Nov 68, pg 1.

Extracts from TOP SECRET documents are classified no higher than SECRET.

16.	(TS) (TS) (TS)	Msg, DPL 65 211, CINCPACAF to CSAF, 25 Feb 65; Msg, AmEmb, Vientiane to SECSTATE and Others, 051129Z Feb 65; Msg, AmEmb, Bangkok, to 13AF, 040922Z, Jun 65.				
17.		Ibid.				
18.	(TS)	CHECO Rprt, Hq PACAF, DOTEC, "USAF Operations from Thailand, 1964-1965" (20-7), 10 Aug 66, pg 110. (Hereafter cited: "USAF Ops from Thailand, 1964-1965.")				
19.	(S/NF)	End-of-Tour Rprt, Brig Gen John R. Murphy, 15 Jun 66.				
20.	(TS)	Msg, CINCPAC to COMUSMACV and Others, subj: "YANKEE TEAM," 21 Aug 64.				
21.	(S)	<pre>Ibid, pg 112; Publication, Tactical Div, Hq USAF, subj: Analysis of Air Ops SEA, Vol II, 12 Apr 65.</pre>				
22.	(U)	Ltr, Hq PACAF, DORC to DOTEC, subj: Project CHECO Rprt, subj: "Recon in SEA, Jul 66-Jun 69," 13 Dec 69, w/Atch;				
	(S/NF) (TS)	CHECO Rprt, "Recon in SEA, Jul 66-Jun 69," 14 Jul 69; CHECO Rprt, Hq PACAF, DOTEC, "The War in Vietnam, 1966" (20-15)				
	(TS)	25 Jan 67, pg 232; Msg, JCS 3477, 13AF to 6234th TFW, Korat AB, 120830Z.				
23.	(S)	"USAF Ops from Thailand, 1964-1965," pg 115.				
24.	(TS/NF)	Minutes, Commanders Conference, Nov 65.				
CHAPTER II						
1.	(U) (TS)	SO G-41, PACAF, 15 Feb 66; Msg, PACAF to 2d Air Div, DOP, 51001.				
2.	(U) (U) (U)	SO G-41, PACAF, 15 Feb 66; SO G-51, PACAF, 25 Feb 66; SO G-295, Hq 7AF, 18 Apr 66.				
3.	(S/NF)	Rprt, Hq PACAF, Summary, Air Operations, SEA, Dec 66, pg 4-2; End-of-Tour Rprt, Col Wendell L. Bevan, Jr., Comdr, 432d TRW, 3 Sep 68-7 Jun 69.				
4.	(S) (S) (S) (S)	SO G-223, PACAF, 21 Jul 66; SO G-193, PACAF, 20 Jun 66; Rprt, Hq PACAF, Summary, Air Operations, SEA, Dec 66, pg 4-2; SO G-270, PACAF, Sep 66; SO G-827, 7AF, 8 Oct 66.				

5. (S) Rprt, Hq PACAF, Summary, Air Operations, SEA, Dec 66, pg 4-1. Rprt, Hq PACAF, Summary, Air Ops, SEA, Dec 66; (S) CHECO Rprt, Hq PACAF, DOTEC, "The War in Vietnam, Jan-Jun 67," (TS) 29 Apr 68, pp 14-15, 42; Rprt, Hq PACAF, "Summary of Air Operations, Jan 67." (S) (U)SO G-329, PACAF, 14 Dec 66; SO G-334, PACAF, 20 Dec 66; (U) SO G-36, PACAF, 23 Feb 67; (U) (U) SO G-52, PACAF, 17 Mar 67; SO G-83, PACAF, 17 May 67; (U) SO G-82, PACAF, 17 May 67; (U)SO G-92, PACAF, 1 Jun 67. (U) (S) 8. Hist Rprt, Hq 7AF, Jan 66-30 Jun 67, pg 40. (S) 9. Rprt, Hq PACAF, Summary, Air Ops, SEA, Dec 67, pg 4-24; (S) Hist Rprt, Hq 7AF, 1 Jan 66-30 Jun 67, pg 40; (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, Dec 67, pg 4-24. 10. (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, Dec 67, pp 4-21, 4-22. Hist Rprt, DCS/Ops, 1 Oct-31 Dec 67. (S) 11. Hist Rprt, 7AF, 1 Jan-30 Jun 68, Pt II, pp xix, xxii, xxvi. 12. (U) CHECO Rprt, Hq PACAF, DOTEC, "Tactical Recon Photography Request/ (S/AFEO) 13. Distribution," 15 Feb 69, pp 23-24; End-of-Tour Rprt, Col Wendell L. Bevan, Jr., Comdr, 432d TRW, (S/NF) 3 Sep 68-7 Jun 69, pg 1-3; Hist Rprt, 460th Tactical Recon Wing (460th TRW-69-014), Oct-(S) Dec 68, Vol II, pg 3. Rprt, 7AF, "Command Status," Jan 69, pp A-8, A-10. **(S)** Study, DPLP, "7AF Force Improvement Plan," Annex F: "Reconnais-14. (S/AFEO) sance," pg F-11. 15. Ibid, pg F-10. 16. (S) Study, Hq 7AF, DPL, "Recon Ops in SEA, to Include Consideration of a Joint Recon Center," Jun 67. CHECO Rprt, Hq PACAF, DOTEC, "The War in Vietnam, Jan-Jun 67" (S) 17. (20-141) 29 Apr 68, pg 49. (LU) AFM 2-6, 1 Dec 65, pg 3-4,b. 18.

Distribution" (20-180), 15 Feb 69, pg xi.

(S/AFEO)

19.

CHECO Rprt, Hq PACAF, DOTEC, "Tactical Recon Photography Request/

CHECO Rprt, Hq PACAF, DOTEC, "The War in Vietnam, Jan-Jun 67" (S) 20. (20-141), 29 Apr 68, pg 48. CHECO Rprt, Hq PACAF, DOTEC, "Tactical Recon Photography Request/ 21. (S/AFEO) Distribution" (20-180), 15 Feb 69, pg 28. 22. (S) Interview, DO Staff, 460th TRW, 24 Jun 69. CHECO Rprt, Hq PACAF, DOTEC, "Tactical Recon Photography Request/ (S/AFEO) 23. Distribution" (20-180), 15 Feb 69, pp 1-20. 24. Ibid. CHECO Rprt, Hq PACAF, DOTEC, "The War in Vietnam, Jan-Jun 67", 25. (S) 29 Apr 68, pg 48. 26. (S) Interview, DO Staff, 460th TRW, 26 Jun 69. CHECO Rprt, Hq PACAF, DOTEC, "Tactical Recon Photography Request/ 27. (S/AFEO) Distribution," 11 Feb 69, pg 11; Memo, Brig Gen George J. Keegan, Jr., DI, 7AF, to DO, C, 7AF, (S) (Tac Recon Photography Request/Distribution), undated. CHECO Rprt, Hq PACAF, DOTEC, "Tac Recon Photography Request/ 28. (S/AFEO) Distribution" (20-180), 15 Feb 69. Rprt, Hq 7AF, "7AF Improvement Report," Annex F, "Reconnaissance," 29. (S) pg F-6. (Hereafter cited: 7AF Improvement Report.) 30. Ibid, pg F-3; (S) DIP Ltr. 31. (S) Interview, DO Staff, 460th TRW, 26 Jun 69. Rprt, 7AF, "Improvement Report," pp F-12, 13. 32. (S) CHECO Rprt, Hq PACAF, DOTEC, "Tac Recon Photography Request/ 33. (S/AFEO) Distribution," 15 Feb 69. Rprt, 460th TRW, 7AF, "TAC RISE Recon Product Delivery, RVN," 34. (S) w/Ltr, Col Robert J. Holbury, Comdr, 460th TRW, to 7AF (DO), 21 Feb 68, pg 3.

Briefing, Hq 7AF, TASE Representatives to MACV Monthly Recon

Rprt, "7AF Command Status," Dec 68.

Plan Conference, 14 Feb 69.

(S)

(S)

35.

36.

37. (S/AFEO) CHECO Rprt, Hq PACAF, DOTEC, "Tactical Recon Photography Request/ Distribution," 15 Feb 69, pg 31.

#### CHAPTER III

- 1. (S/AFEO) Rprt, Hq 7AF, "7AF Force Improvement Plan," Annex F, pp 5, 6.
- 2. Ibid, Annex F, pg 5.
- 3. (S) Ltr, DOCR, 7AF, to DOAC, 7AF, subj: Coordination of CHECO Rprt, undated, (6 Sep 69).
- 4. (S) CHECO Rprt, Hq PACAF, DOTEC, "FAC Ops in CAS Role in SVN," 31 Jan 69, pg 24.
- 5. (S/NF) CHECO Rprt, Hq PACAF, DOTEC, "Visual Recon in I Corps," 30 Sep 68, pg 18.
- 6. <u>Ibid</u>, pp 21-22.
- 7. (S/AFEO) Rprt, Hq 7AF, "7AF Force Improvement Plan," Annex F, pg 5.
- 8. (TS) Msg, 23d TASS, Nakhon Phanom, RTAFB, Thailand, subj: Night Operations, 211245Z Feb 67; (S/NF) WAIS, 7AF, 16 Dec 67, pp 24-25.
- 9. (TS) CHECO Rprt, Hq PACAF, DOTEC, "USAF Ops from Thailand, 1964-1965" (20-7), 10 Aug 66, pg 102.
- 10. (TS/NF) CHECO Rprt, Hq PACAF, DOTEC, "USAF Ops from Thailand-1966," 31 Oct 67, pg 68. (Hereafter cited: "USAF Ops from Thailand-1966.")
- 11. (S/AFEO) Rprt, Hq 7AF, "7AF Improvement Plan," Annex, pp F-14, 15, 6; (S) DIP Ltr.
- 12. (S/AFEO) Rprt, Hq 7AF, "7AF Improvement Plan," Annex, pp F-23, 20.
- 13. (S) DIP Ltr; (S) Msg, COMUSMACV to CINCPAC, 12 Feb 67.
- 14. (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, "YANKEE TEAM Sortie Comparison, May 64-Aug 66," Aug 66;
  - (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, "Sorties by Nickname/MISSION IDENTIFIER," Dec 66.
- 15. (TS/NF) "USAF Ops from Thailand 1966."
- 16. (S) Msg, COMUSMACV to CINCPAC, 12 Feb 67.

CHECO Rprt, Hq PACAF, DOTEC, "Tac Recon Photography Request/ 17. (S/AFEO) Distribution," 15 Feb 69, pp 29-30. Msg, COMUSMACV to CINCPAC, 12 Feb 67. 18. (S) 19. Ibid. Pamphlet, 55-2, Hg 7AF, Report on "ROLLING THUNDER Operations," 20. (S) pq 65. "The EC-47 in SEA." 21. (S/NF)Hist Rprt, 460th TRW, Dep Comdr, Ops Sect, 1 Jan-30 Jun 66. 22. (S/NF)(DXIH PACAF Files) 23. (S/NF)Manual, 460th TRW, Nr 55-1, Mar 68, pg 33. 24. Ibid, pg 26. 25. (U) Table of Reconnaissance Force Structure, Jun 66-Jun 69. CHECO Rprt, Hq PACAF, DOTEC, "IGLOO WHITE (Initial Phase)," 26. (TS) 31 Jul 68, pg 1. (Hereafter cited: "IGLOO WHITE.") Rprt on OPlan 481-68, 7AF, DYE MARKER, 10 Aug 67, Annex B, 27. (TS/NF) pg B-1. 28. (TS) "IGLOO WHITE." 29. (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, 1 Jan-30 Jun 67, pg 4-1. 30. Ibid, pg 4-24. 31. (S) Hist Rprt, Hq 7AF, 1 Jul-31 Dec 67, pg 37. Msg, CINCPAC to CINCPACAF, 7 Feb 67; 32. (S) (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, May 67. 33. (TS) Special Rprt, 7AF/13AF, DO, "Operation TRUCK-BUSTER." Msg, COMUSMACV to CINCPAC, 12 Feb 67. 34. (S) Rprt, Hq PACAF, Summary, Air Ops, SEA, "Reduction of Recon Acft 35. (S) Losses," Apr 67, pp 7-B-1 - 7-B-3. 36. Ibid.

Hist Rprt, Hq 7AF, 1 Jul-31 Dec 67, pp 33-34.

37.

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### CONFIDENTIAL

- 38. (S/AFEO) Rprt, Hq 7AF, "7AF Force Improvement Plan," Annex F, pp 16-17.
- 39. Ibid.
- 40. (S/NF) End-of-Tour Rprt, Col Wendell L. Bevan, Jr., Comdr, 432d TRW, 3 Sep 68-7 Jun 69.
- 41. Ibid, pp 2-3-2-4.
- 42. Ibid, pp 2-6, 2-7.
- 43. <u>Ibid</u>, pg 2-8.
- 44. (C) Ltr, Col E. H. Beeson, DIP to DIP, 7AF, 29 Dev 68.
- 45. (U) Research of 7AF, DIP Files, "Refinement of FAC Hand-Held Camera Program."
- 46. (C) Msg, 7AF to CINCPACAF/DO/DI/DM, (Sig) Brig Gen Robert L. Petit, Chief of Staff.
- 47. (U) Research of 7AF, DIP Files, "Value of Hand-Held Cameras."
- 48. (S) Hist Rprt, Hq 7AF, 1 Jan-30 Jun 68, pg 44.
- 49. (S) Ltr, DOC, 7AF, to MACV J-211, subj: Artillery-Recon, 11 Mar 68.
- 50. (S) Hist Rprt, Hq 7AF, 1 Jan-30 Jun 68, pp 46-47.
- 51. (S/AFEO) Rprt, Hq 7AF, "7AF Force Improvement Plan," Annex F, pg 21.
- 52. (S) Hist Rprt, Hq 7AF, 1 Jan-30 Jun 68, pp 50-51.
- 53. (S) Hist Rprt, MACV, Command History 1968, pg 433.
- 54. <u>Ibid</u>, pg 140; (S) <u>Hist</u> Rprt, 460th TFW, Vol I, pg v.
- 55. (S/NF) End-of-Tour Rprt, Col Wendell L. Bevan, Jr., Comdr, 432d TRW, 3 Sep 68-7 Jun 69.
- 56. (S/NF) "The EC-47 in SEA," pg 37 and Figures.

#### CHAPTER IV

1. (S) Ltr, Hq 7AF, Lt Col Luther A. Tarbos, Chief, Special Recon Ops Branch, to 7AF, DOCR.

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2. (U) Research of 7AF, DIP, Files, "Value of Hand-Held Cameras." 3. (S) Hist Rprt, MACV, Command History, 1968, pg 431. 4. (U) Telecom, Maj Philip Caine with Col Arkin, 460th TRW, TSN, 1 Nov 69. (Hereafter cited: Colonel Arkin Telecom.) 5. (U) Interview, Maj Philip Caine with Maj Ed Shank, MACV, J-2, TASE, TSN, 31 Oct 69. (Hereafter cited: Major Shank Interview.); Memo, Lt Col Chatfield to Col H. M. Fish, Director of Tac (C) Analysis, "Scoring Photo Recon Effectiveness, Army - AF, 10 Oct 69" (C), 10 Oct 69. (U) 6. Colonel Arkin Telecom. 7. (U) Major Shank Interview. 8. (S) Interview, DO Staff, 460th TRW, 26 Jun 69. Ltr, DOCR, 7AF, to DOAC, 7AF, subj: Coordination of CHECO 9. (S) Rprt, undated (6 Sep 69). Rprt, Hq 7AF, "7AF Force Improvement Plan," Annex F, APP I, 10. (S/AFEO) "Total Recon Acft in 7AF OpCon;" Ltr, Hq PACAF, DORC, to DOTEC, subj: Project CHECO Rprt, subj: "Recon in SEA, Jul 66-Jun 69," 13 Dec 69, w/Atch; (S) Atch, CHECO Rprt, "Recon in SEA, Jul 66-Jun 69," 14 Jul 69. (S/NF)



on day photo and SLAR targets and <code>d5XidHadqA</code> of the target area is observable on infrared and nighAISatisOtGNAe2MNSTABOiNOTAXIGNADNATQuality of the imagery

must be acceptable for readout and use.

The Army and Air Force have agreed on the following criteria, with the 4. Targets Attempted. (This has not been agreed upon.)

\*\*Example of the content of t

A target attempt shall result when the aircrew activates the required sensor

Mission/target/objective requested/received/scheduled.

Flying over the target area without actuating the sensor shall not be counted inioqniq ro, qirtz, sensor are area satisfied at tempt.

if yerogets at the low simply a takent. Reconsistance of the target are target as the Army wants a target attempt to be simply a takeoff with the target as characters. Joing prince and prince of the problem that results is that the Air Force always tasks the short the objective. The problem that results is that the Air Force always tasks the aircraft with more targets than it can complete in order to provide some aircraft with more targets than it can complete in order to provide some tauppary yellad. (steprat beviesen/betseuper 4 sa betnuous ad Iliw 4 ho yeneuper flexibility. The Army definition would lead to a high attempt with a low comflexibility. The Army definition would lead to a high attempt with a low completion rate, because the Air Force would not complete 100 percent on any pletion rate, because the Air Force would make the attempt and completion ratio more mission. The Air Force idea would make the attempt and completion ratio more mission. The Air Force idea would make the attempt and completion ratio more mission. The Air Force idea would make the attempt and completion ratio more separated.

meaningful.

Targets cancelled.

These are previously requested/received targets that have been cancelled by the requester or have not been successfully completed by the DNLV.

Targets completed.

These are targets wherein acceptable image coverage has been obtained. Acceptable ground coverage shall mean that 85 percent of the target area is observable



on day photo and SLAR targets and 65 percent of the target area is observable on infrared and night photo targets. Additionally, the quality of the imagery must be acceptable for readout and use.

4. Targets Attempted. (This has not been agreed upon.)

A target attempt shall result when the aircrew activates the required sensor.

Flying over the target area without actuating the sensor shall not be counted as a target attempt.

The Army wants a target attempt to be simply a takeoff with the target as the objective. The problem that results is that the Air Force always tasks the aircraft with more targets than it can complete in order to provide some flexibility. The Army definition would lead to a high attempt with a low completion rate, because the Air Force would not complete 100 percent on any mission. The Air Force idea would make the attempt and completion ratio more meaningful.

SOURCE: Maj. Ed Shank, MACV, J-2, TASE, 31 Oct 69.



#### **GLOSSARY**

AECM Active Electronic Countermeasure AEMS Armament and Electronic Squadron

AGL Above Ground Level
ALO Air Liaison Officer

ARDF Airborne Radio Direction Finding

BDA Bomb Damage Assessment

CINCPAC Commander-in-Chief, Pacific Command

COMUSMACV Commander, U.S. Military Assistance Command, Vietnam

CRC Command and Reporting Center
CRP Command and Reporting Post
CSAF Chief of Staff, U.S. Air Force

DASC Direct Air Support Center

DMZ Demilitarized Zone
DNLV Date No Longer of Value

ECM Electronic Countermeasure
ELINT Electronic Intelligence
ER Electronic Reconnaissance

FAC Forward Air Controller

GS Ground Speed

IPIR Immediate Photo Intelligence Report

IR Infrared

ISC Infiltration Surveillance Center

JCS Joint Chiefs of Staff

JRC Joint Reconnaissance Center

LULTV Low-Light-Level Television LOC Line of Communications

MACV Military Assistance Command, Vietnam

MAF Marine Amphibious Force

NVN North Vietnam

PCS Permanent Change of Station

PECM Passive Electronic Countermeasure

PI Photo Interpretation

POL Petroleum, Oil, and Lubricants

PPIF Photo Processing and Interpretation Facility

RCS Requirement Clearance Symbol

Recon Reconnaissance

RS Reconnaissance Squadron

RTAFB Royal Thailand Air Force Base RTF Reconnaissance Task Force

RTS Reconnaissance Technical Squadron

RVN Republic of Vietnam RW Reconnaissance Wing

SAM Surface-to-Air Missile

SEA Southeast Asia

SEAOR Southeast Asia Operational Requirement

SIGINT Significant Intelligence
SLAR Side-Looking Airborne Radar
SRO Staff Reconnaissance Officer
STOL Short Takeoff and Landing

SVN South Vietnam

TACC Tactical Air Control Center TACP Tactical Air Control Party

TAC RISE Tactical Reconnaissance Intelligence System Enhancement

TASE Tactical Air Support Element

TEWS Tactical Electronic Warfare Squadron
TRS Tactical Reconnaissance Squadron
TRW Tactical Reconnaissance Wing

TSN Tan Son Nhut

VNAF Vietnamese Air Force VR Visual Reconnaissance

VSTOL Vertical Short Takeoff and Landing

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